

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 25

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TOSHIHIRO KOGA

Appeal No. 95-5053
Application 08/048,188¹

HEARD: May 5, 1999

Before BARRETT, DIXON, and BARRY, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

¹ Application for patent filed April 20, 1993, entitled "Wireless Telephone Equipment Operating As A Cordless And Cellular Telephone."

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DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 1-9.

We reverse.

BACKGROUND

The disclosed invention is directed to a wireless telephone equipment operating as a cordless and cellular telephone. The cordless frequency reception band and the cellular frequency reception band are combined into a combined cellular/cordless frequency band and a single demodulating circuit is used for demodulating the received cordless or cellular signal.

Claim 1 is reproduced below.

1. A wireless telephone equipment comprising:

signal generation means for generating a first information signal of an outgoing call;

first transmitting means for modulating a first carrier with the first information signal generated by the signal generation means to produce a first modulated signal, wherein a frequency of the first carrier is in a first frequency band corresponding to a cellular frequency band;

second transmitting means for modulating a second carrier with the first information signal generated by the signal generation means to produce a second modulated signal, wherein a frequency of the second carrier is in a

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second frequency band corresponding to a cordless frequency band that is different from the first frequency band of the first carrier;

antenna means for transmitting either the first modulated signal produced in the first transmitting means or the second modulated signal produced in the second transmitting means and receiving a third modulated signal in which a third carrier is modulated with a second information signal of an incoming call, wherein a frequency of the third carrier is in a third frequency band corresponding to a combined cellular/cordless frequency band that is different from both the first frequency band of the first carrier and the second frequency band of the second carrier;

a single demodulating circuit for demodulating the third modulated signal received in the antenna means to reproduce the second information signal of the incoming call;

outputting means for outputting the second information signal reproduced in the demodulating circuit; and

control means for controlling the operation of the first transmitting means, the second transmitting means, and the demodulating circuit.

The examiner relies on the following prior art references:

1986	Imazeki et al. (Imazeki)	4,618,997	October 21,
1988	Ichikawa et al. (Ichikawa)	4,776,040	October 4,
1991	Gillig et al. (Gillig)	4,989,230	January 29,
1992	Nakanishi et al. (Nakanishi)	5,144,258	September 1,

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		(filed July 15,
1991)		
Ichihara	5,196,806	March 23,
1993		
		(filed October 21,
1991)		
Rose et al.	5,297,203	March 22,
1994		
		(effective filing date May 29,
1991)		

Claims 1-4 and 9 stand rejected under 35 U.S.C. § 103 as being unpatentable over Gillig and Rose.

Claims 5 and 8 stand rejected under 35 U.S.C. § 103 as being unpatentable over Gillig and Rose, further in view of Imazeki.

Claim 6 stands rejected under 35 U.S.C. § 103 as being unpatentable over Gillig, Rose, and Imazeki, further in view of either Ichihara or Nakanishi.

Claim 7 stands rejected under 35 U.S.C. § 103 as being unpatentable over Gillig and Rose, further in view of Imazeki and Ichikawa.

We refer to the Final Rejection (Paper No. 10) and the Examiner's Answer (Paper No. 14) (pages referred to as "EA__") for a statement of the examiner's position and to the Appeal

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Brief (Paper No. 13) (pages referred to as "Br__") for a statement of appellant's arguments thereagainst.

OPINION

Appellant states that the claims do not stand or fall together (Br6). However, appellant does not separately argue the patentability of the dependent claims as required for claims to be treated as not standing or falling together. See 37 CFR § 1.192(c)(5) (1994) ("[I]t will be presumed that the rejected claims stand or fall together unless a statement is included that the rejected claims do not stand or fall together, and in the appropriate part or parts of the argument under subparagraph (c)(6) of this section appellant presents reasons as to why appellant considers the rejected claims to be separately patentable" (emphasis added)). The claims will be presumed to stand or fall together with representative independent claim 1.

Gillig teaches a cordless/cellular telephone corresponding to the prior art discussed in the specification at Section 2.1. Gillig discloses that "[i]n the U.S.A., the cordless radio channels are in the frequency band from 46-49 mHz and the cellular radio channels are in the frequency band

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from 824-894 mHz" (col. 2, lines 48-51). The admitted prior art of appellant's figure 3 shows that the cellular handset transmits in the frequency band of 824-849 MHz and receives in the frequency band of 869-894 MHz.

Rose teaches that conventional prior art cordless telephones used a radio frequency band usually in the 46 and 49 MHz bands and used Narrow-Band Frequency Modulation (NBFM) (col. 1, lines 27-35), but that revised FCC regulations authorized cordless radio channels in the frequency band of 902-928 MHz (col. 2, lines 55-61). Rose teaches a cordless telephone where the handset and the base unit communicate using frequency shift keying (FSK) in the 902-928 MHz band where, for example, the base unit operates in the frequency band of 905.6-907.5 MHz and the handset operates in the frequency band of 925.5-927.4 MHz (col. 4, lines 50-54). Thus, the handset in Rose transmits in the frequency band of 925.5-927.4 MHz and receives in the frequency band of 905.6-907.5 MHz.

The examiner concludes that it would have been obvious to one of ordinary skill in the art to modify the cordless/cellular telephone of Gillig to use the 900 MHz band

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instead of the 45 MHz band for the performance advantages of, for example, shorter antenna wavelength (EA5). Appellant does not contest this conclusion and we agree that this modification would have been suggested to one of ordinary skill in the art by Rose.

The limitations at issue are: (1) "receiving a third modulated signal in which a third carrier is modulated with a second information signal of an incoming call, wherein a frequency of the third carrier is in a third frequency band corresponding to a combined cellular/cordless frequency band that is different from both the first frequency band of the first carrier and the second frequency band of the second carrier"; and (2) "a single demodulating circuit for demodulating the third modulated signal received in the antenna means to reproduce the second information signal of the incoming call."

The examiner's position is (EA6):

Therefore, given the close [frequency] transmission ranges between which the cordless telephone and cellular telephone base stations transmit, it would have been obvious to one of ordinary skill in the art, at the time of invention, to have provided a common passband filter/receiving means, thus receiving both frequency ranges transmitted by either type of base station. The motivation for implementing a common passband

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filter/receiver means would have been to reduce redundant operation by two different passband/receiver means whose passband operation is within close proximity to each other, and hence reducing the number of components, cost, etc.

Appellant argues that the prior art does not suggest providing a single demodulating circuit for both cordless telephone and cellular telephone frequency ranges (Br7) and "[i]ndeed, the prior art exclusively uses separate demodulating circuits for cellular and cordless frequency bands" (Br8). Appellant further argues that "[m]erely the inherent proximity of the bands does not suggest to the artisan use of a common demodulating circuit" (Br7). Appellant still further argues that the examiner's motivation, "to reduce redundant operation," is misplaced and not supported by the art of record (Br8).

While the examiner has set forth a plausible explanation why one of ordinary skill in the art would have sought to provide a single demodulating circuit for demodulating received signals in a combined frequency band including both cellular and cordless received signals, the examiner has presented no factual evidence of motivation that we can rely

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on. Consequently, the examiner has failed to establish a prima facie case of obviousness.

As recently stated by our reviewing court, the Court of Appeals for the Federal Circuit in In re Dembiczak, No. 98-1498 (Fed. Cir. April 28, 1999) (slip op. at 10): "Our case law makes clear that the best defense against the subtle but powerful attraction of hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references." A suggestion to combine or modify "may come expressly from the references themselves. It may come from knowledge of those skilled in the art that certain references, or disclosures in the references, are known to be of special interest or importance in the particular field. It may also come from the nature of a problem to be solved, leading inventors to look to references relating to possible solutions to that problem." (Citations omitted.) Pro-Mold and Tool Co. v. Great Lakes Plastics Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996). Of these three sources of motivation (the nature of the problem to be solved, teachings of the prior art, and the knowledge of persons of

ordinary skill in the art), the examiner relies on the knowledge of persons of ordinary skill in the art because neither Gillig nor Rose discloses the contested limitations of combining two adjacent frequency bands into a single band or using a single demodulating circuit. However, the knowledge attributed to one of ordinary skill in the art must be supported by evidence, not just plausible explanations of why something might have been done or statements that it was within the level of skill in the art. Cf. In re Rouffet, 149 F.3d 1350, 1358, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) ("Because the Board did not explain the specific understanding or principle within the knowledge of a skilled artisan that would motivate one with no knowledge of Rouffet's invention to make the combination, this court infers that the examiner selected these references with the assistance of hindsight."). Here, the examiner got to the point of proving that it would have been obvious for the received frequency bands of cordless and cellular telephones to be adjacent and then, at the very limitations which constitute appellant's invention, used hindsight rationale based on appellant's disclosure to supply the motivation to use a common frequency band and a single

demodulating circuit. The examiner could have, but did not show examples of combining frequency bands that are adjacent, but separated from each other, and/or a single demodulation circuit for diverse communication schemes in other pieces of equipment, which would have objectively demonstrated the knowledge of a person of ordinary skill. We note also that the examiner has not shown that cellular telephones and 900 MHz cordless telephones use the same modulation/demodulation scheme, which would permit a single demodulation circuit.²

² It is noted that appellant describes different modulation schemes for cellular and cordless transmission. It is stated that "[t]he modulation of the carrier in PLL frequency synthesizer 61 [in the cellular transmitter 52] is performed according to a frequency shift keying" (specification, page 26, lines 17-19) and "[t]he modulation of the carrier in the PLL frequency synthesizer 67 [in the cordless transmitter 53] is performed according to a pulse modulation" (specification, page 27, lines 11-12). This implies a frequency shift keying demodulation scheme for receiving cellular transmissions and a pulse modulation demodulation scheme for receiving cordless transmissions, which is seemingly inconsistent with providing a single demodulation circuit. The specification does not describe the demodulation scheme. We believe appellant should explain for the record how a single demodulation circuit is used for two different modulation schemes.

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For the reasons stated above, the examiner has failed to establish a prima facie case of obviousness over Gillig and Rose. The patents to Imazeki, Ichikawa, Nakanishi, and Ichihara do not cure the deficiencies as to the rejection of claim 1. The rejection of claims 1-9 is reversed.

REVERSED

LEE E. BARRETT)	
Administrative	Patent Judge)
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)	
)	
)	BOARD OF PATENT
JOSEPH L. DIXON)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
)	
)	
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LANCE LEONARD BARRY)	
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